

Unggahan Harian

PROGRAM LINEAR

1. Pak Syarif ingin membeli 25 sepeda untuk persediaan dagangannya. Ia ingin membeli sepeda gunung dengan harga Rp 1.500.000,00 per buah dan sepeda balap dengan harga Rp 2.000.000,00 per buah. Ia merencanakan tidak akan mengeluarkan uang lebih dari Rp 42.000.000,00. Jika keuntungan sebuah sepeda gunung Rp 500.000,00 dan sebuah sepeda balap Rp 600.000,00 tentukan keuntungan maksimum yang diterima Pak Syarif.



	Sepeda gunung	Sepeda Balap	Persediaan
Unit			
Harga			
Untung			

Model Matematika :

Fungsi tujuan : $f(x, y) = \dots\dots\dots x + \dots\dots\dots y$

Kendala $\dots\dots\dots + \dots\dots\dots \leq$
 $\dots\dots\dots + \dots\dots\dots \leq$ (dibagi $\dots\dots\dots$)
 $\dots\dots\dots + \dots\dots\dots \leq$

$$x \geq 0$$

$$y \geq 0$$

Menentukan titik potong sumbu

Persamaan 1 :

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

Sumbu $x, y = 0$

$$\dots\dots\dots = \dots\dots\dots \quad (\dots\dots, \dots\dots)$$

Sumbu $y, x = 0$

$$\dots\dots\dots = \dots\dots\dots \quad (\dots\dots, \dots\dots)$$

Persamaan 2:

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

Sumbu $x, y = 0$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \frac{\dots\dots\dots}{\dots\dots\dots}$$

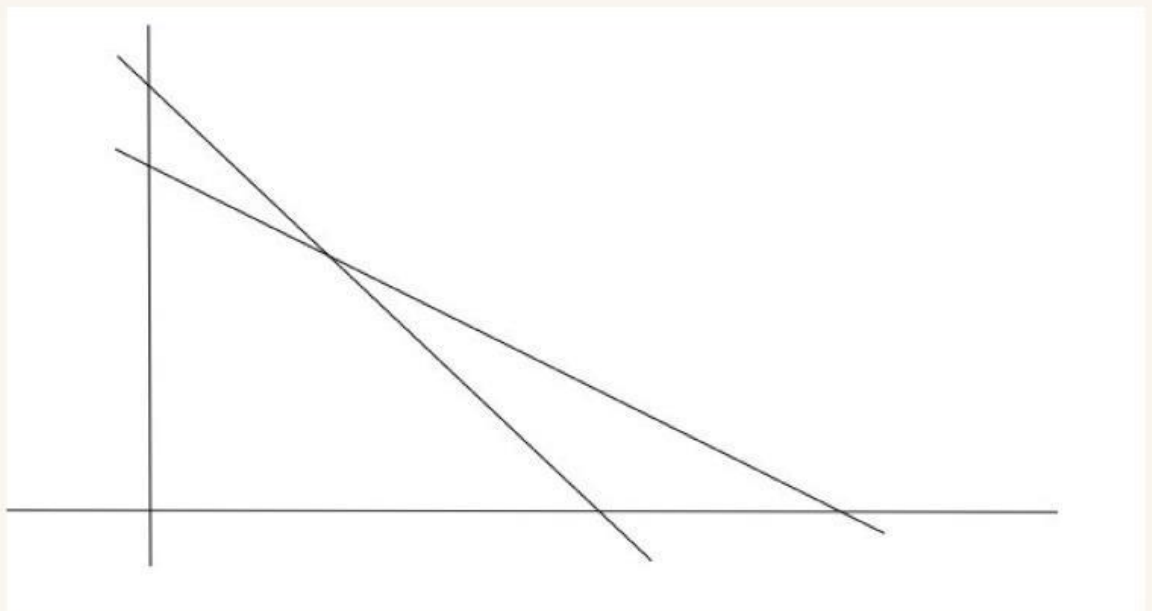
$$\dots\dots\dots = \dots\dots\dots (\dots\dots\dots, \dots\dots\dots)$$

Sumbu $y, x = 0$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \frac{\dots\dots\dots}{\dots\dots\dots}$$

$$\dots\dots\dots = \dots\dots\dots (\dots\dots\dots, \dots\dots\dots)$$



Menentukan potong antar garis

$$\begin{array}{l} \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \\ \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \end{array} \quad \left| \begin{array}{l} \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \\ \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \end{array} \right. -$$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \dots\dots\dots$$

Substitusikan ke persamaan (1):

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \dots\dots\dots$$

titik pojok yang diperoleh adalah A (.....,), B (.....,), C (.....,).

Menentukan nilai optimum:

$$f(x, y) = \dots\dots\dots x + \dots\dots\dots y$$

$$A(\dots\dots, \dots\dots) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$B(\dots\dots, \dots\dots) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$C(\dots\dots, \dots\dots) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

Jadi keuntungan maksimum yang diterima Pak Syarif adalah Di titik ... (.....,)

Ulangan Harian

2. Toko "SUBUR" menyediakan dua jenis pupuk, yaitu standar dan super. Dalam setiap 1 sak jenis pupuk tersebut mengandung campuran bahan nitrogen dan fosfat dalam jumlah tertentu.

Jenis	Kandungan Bahan Kimia	
	Nitrogen (Kg/sak)	Fosfat (Kg/sak)
Standar	2	4
Super	4	3

Seorang petani membutuhkan paling sedikit 22 Kg nitrogen dan 24 Kg fosfat untuk lahan pertaniannya. Harga pupuk standar dan super masing-masing Rp. 30.000 dan Rp 50.000. petani tersebut ingin mengetahui berapa sak masing-masing jenis pupuk harus dibeli agar total harga mencapai minimum dan kebutuhan pupuk terpenuhi.

Model Matematika :

Fungsi tujuan : $f(x, y) = \dots\dots\dots x + \dots\dots\dots y$

Kendala

$$\begin{array}{rcl} \dots\dots\dots + \dots\dots\dots & \geq & \dots\dots\dots \quad (\text{dibagi } \dots\dots\dots) \\ \dots\dots\dots + \dots\dots\dots & \geq & \dots\dots\dots \\ \dots\dots\dots + \dots\dots\dots & \geq & \dots\dots\dots \quad (\text{dibagi } \dots\dots\dots) \\ \dots\dots\dots + \dots\dots\dots & \geq & \dots\dots\dots \\ & & x \geq 0 \\ & & y \geq 0 \end{array}$$

Menentukan titik potong sumbu

Persamaan 1 :

$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

Sumbu $x, y = 0$

$\dots\dots\dots = \dots\dots\dots$

$\dots\dots\dots = \frac{\dots\dots\dots}{\dots\dots\dots}$

$\dots\dots\dots = \dots\dots\dots (\dots\dots\dots, \dots\dots\dots)$

Sumbu $y, x = 0$

$\dots\dots\dots = \dots\dots\dots$

$\dots\dots\dots = \frac{\dots\dots\dots}{\dots\dots\dots}$

$\dots\dots\dots = \dots\dots\dots (\dots\dots\dots, \dots\dots\dots)$

Persamaan 2:

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

Sumbu $x, y = 0$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \frac{\dots\dots\dots}{\dots\dots\dots}$$

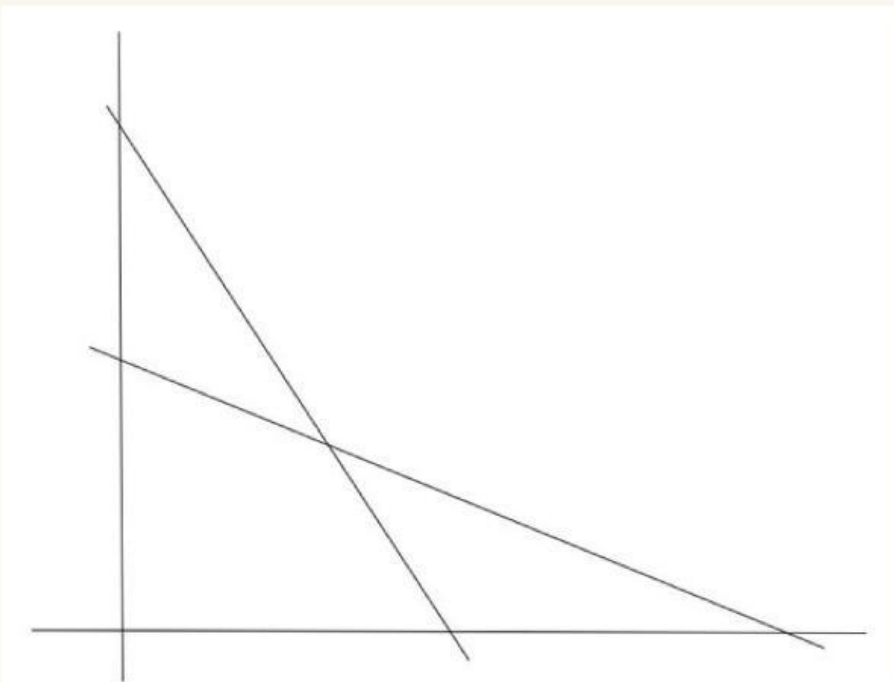
$$\dots\dots\dots = \dots\dots\dots (\dots\dots\dots, \dots\dots\dots)$$

Sumbu $y, x = 0$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \frac{\dots\dots\dots}{\dots\dots\dots}$$

$$\dots\dots\dots = \dots\dots\dots (\dots\dots\dots, \dots\dots\dots)$$



Menentukan potong antar garis

$$\begin{array}{l} \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \\ \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \end{array} \quad \begin{array}{l} \dots\dots\dots \\ \dots\dots\dots \end{array} \quad \begin{array}{l} \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \\ \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \\ \hline \dots\dots\dots = \dots\dots\dots \\ \dots\dots\dots = \dots\dots\dots \end{array}$$

Substitusikan ke persamaan (1):

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \dots\dots\dots$$

$$\dots\dots\dots = \dots\dots\dots$$

titik pojok yang diperoleh adalah A (.....,), B (.....,), C (.....,).

Menentukan nilai optimum:

$$f(x, y) = \dots\dots\dots x + \dots\dots\dots y$$

$$A(\dots\dots, \dots\dots) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$B(\dots\dots, \dots\dots) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

$$C(\dots\dots, \dots\dots) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

Jadi, untuk mencapai harga minimum pupuk harus dibeli, yaitu sak pupuk jenis standar dan sak pupuk jenis super.

SELESAI